Case Docket No. CANNING.001CP2
Date: October 10, 2003

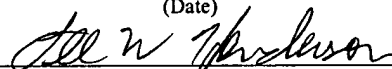# IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant	:	Francis X. Canning
Appl. No.	:	10/619,796
Filed	:	July 15, 2003
For	:	SPARSE AND EFFICIENT BLOCK FACTORIZATION FOR INTERACTION DATA
Examiner	:	Unknown
Group Art Unit :		Unknown

I hereby certify that this correspondence and all marked attachments are being deposited with the United States Postal Service as first class mail in an envelope addressed to: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450, on

_____October 10, 2003_____
(Date)

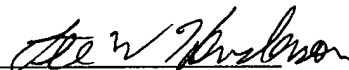Lee W. Henderson Ph.D., Reg. No. 41,830

TRANSMITTAL LETTER

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Dear Sir:

Enclosed for filing in the above-identified application are:

(X) An Information Disclosure Statement.

(X) A PTO Form 1449 with forty-seven (47) references.

(X) The Commissioner is hereby authorized to charge any additional fees which may be required, or credit any overpayment, to Account No. 11-1410.

(X) Return prepaid postcard.

Lee W. Henderson Ph.D.
Registration No. 41,830
Attorney of Record
Customer No. 20,995
(949) 760-0404

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INFORMATION DISCLOSURE STATEMENT

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App. No.	:	10/619,796
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Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Dear Sir:

Enclosed is form PTO-1449 listing references that were previously disclosed to or cited by the Patent and Trademark Office in the prosecution of U.S. patent application No. 10/354,241, filed on January 29, 2003, which is a continuation-in-part of U.S. Patent Application No. 09/676,727, filed on September 29, 2000, which is the parent of this application, and is relied upon for an earlier filing date under 35 U.S.C. § 120. Copies of the references are not submitted pursuant to 37 C.F.R. § 1.98(d).

This Information Disclosure Statement is being filed with an RCE or within three months of the filing date of this application and no fee is required in accordance with 37 C.F.R. § 1.97(b)(1), (b)(2), or (b)(4).

Respectfully submitted,

KNOBBE, MARTENS, OLSON & BEAR, LLP

Dated: _Oct 10, 2003_   By:_____

Lee W. Henderson Ph.D.
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Attorney of Record
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(949) 760-0404

FORM PTO-1449	U.S. DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE	ATTY. DOCKET NO. CANNING.001CP2	APPLICATION NO. 10/619,796
INFORMATION DISCLOSURE STATEMENT BY APPLICANT (USE SEVERAL SHEETS IF NECESSARY)		APPLICANT Francis X. Canning	
		FILING DATE July 15, 2003	GROUP Unknown

U.S. PATENT DOCUMENTS

EXAMINER INITIAL		DOCUMENT NUMBER	DATE	NAME	CLASS	SUBCLASS	FILING DATE (IF APPROPRIATE)
	1	5,548,798	08/20/96	King			
	2	5,615,288	03/25/97	Koshi, et al.			
	3	5,867,416	02/02/99	Feldmann, et al.			
	4	6,051,027	04/18/00	Kapur, et al.			
	5	6,064,808	05/16/00	Kapur, et al.			

EXAMINER INITIAL		OTHER DOCUMENTS (INCLUDING AUTHOR, TITLE, DATE, PERTINENT PAGES, ETC.)
	6	Kevin Amaratunga, "A Wavelet-Based Approach for Compressing Kernel Data in Large-Scale Simulations of 3D Integral Problems", Computing in Science & Engineering, July/August 2000, pp. 35-45
	7	Soren Anderson, "On Optimal Dimension Reduction for Sensor Array Signal Processing", Signal Processing, January 1993, pp. 245-256
	8	Boag, et al., "Complex Multiple Beam Approach to Electromagnetic Scattering Problems", IEEE Transactions on Antennas and Propagation, Vol. 42, No. 3, March 1994
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	11	Brandt, et al., "Multilevel Matrix Multiplication and Fast Solution of Integral Equations", Journal of Computational Physics, 1990, pp. 348-370
	12	Bucci, et al., "On the Degrees of Freedom of Scattered Fields", IEEE Transactions on Antennas and Propagation, Vol. 37, No. 7, July 1989, pp. 918-926
	13	Francis X. Canning, "The Impedance Matrix Localization (IML) Method for Moment-Method Calculations", IEEE Antennas and Propagation Magazine, Vol. 23, No. 5, October 1990, pp. 18-30
	14	Francis X. Canning, "Reducing Moment Method Storage from Order N^2 to Order N", Electronics Letters, Vol. 25, No. 19, September 1989, pp/ 1274-1275
	15	Francis X. Canning, "Solution of Impedance Matrix Localization Form of Moment Method Problems in Five Iterations", Radio Science, Vol. 30, No. 5, Sept.-Oct. 1995, pp. 1371-1384
	16	Francis X. Canning, "Fast Sparse Decomposition of Standard Moment Matrices", 1997 North American Radio Science Meeting, Program and Abstracts, July 1997, pp. 68-69
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	18	Francis X. Canning, "Improved Impedance Matrix Localization Method", IEEE Transactions on Antennas and Propagation, Vol. 41, No. 5, May 1993, pp. 659-667
	19	Francis X. Canning, "A Fast Moment Method Matrix Solver", 14th Annual Review of Progress in Applied Computational Electromagnetics, March 1998, pp. 449-454

EXAMINER	DATE CONSIDERED

*EXAMINER: INITIAL IF CITATION CONSIDERED, WHETHER OR NOT CITATION IS IN CONFORMANCE WITH MPEP 609; DRAW LINE THROUGH CITATION IF NOT IN CONFORMANCE AND NOT CONSIDERED, INCLUDE COPY OF THIS FORM WITH NEXT COMMUNICATION TO APPLICANT.

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(USE SEVERAL SHEETS IF NECESSARY)	FILING DATE July 15, 2003	GROUP Unknown

EXAMINER INITIAL		OTHER DOCUMENTS (INCLUDING AUTHOR, TITLE, DATE, PERTINENT PAGES, ETC.)
	20	Coifman, et al., "The Fast Multipole Method for the Wave Equation: A Pedestrian Prescription", IEEE Antennas and Propagation Magazine, Vol. 35, No. 3, June 1993, pp. 7-12
	21	Deng, et al., "Fast Solution of Electromagnetic Integral Equations Using Adaptive Wavelet Packet Transform", IEEE Transactions of Antennas and Propagation, Vol. 47, No. 4, April 1999, pp. 674-682
	22	Gothard, et al., "A New Technique to Generate Sparse Matrix Using the Method of Moments – Application to Two-Dimensional Problems", Presented at the URSI Meeting, June 1995, Newport Beach, California, Page 302 of the meeting digest
	23	Greengard, et al., "A Fast Algorithm for Particle Simulations", Journal of Computational Physics, Vol. 73, No. 2, December 1987, pp. 325-348
	24	Gabriel F. Hermann, "Note on Interpolational Basis Functions in the Method of Moments", IEEE Transactions on Antennas and Propagation, Vol. 38, No. 1, January 1990, pp. 134-137
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	26	Kapur, et al., "IES^3: A Fast Integral Equation for Efficient 3-Dimensional Extraction", International Conference on Computer-Aided Design, November 9-13, 1997
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	33	Michielssen, et al., "A Multilevel Matrix Decomposition Algorithm for Analyzing Scattering from Large Structures", IEEE, Vol. 44, No. 8, August 1996, pp. 1086-1093
	34	Michielssen, et al., "Reduced Representation of Matrices Generated by the Method of Moments", IEEE, Vol. 1, No. 94CH3466-0, June 1994, pp. 419-423
	35	Douglas M. Photiadis, "The Relationship of Singular Value Decomposition to Wave-Vector Filtering in Sound Radiation Problems", J. Acoust. Soc. Am. 88(2), August 1990, pp. 1152-1159
	36	Ronald J. Pogorzelski, "Improved Computational Efficiency via Near-Field Localization", IEEE Transactions on Antennas and Propagation, Vol. 41, No. 8, August 1993, pp. 1081-1087
	37	Rao, et al., "A New Technique to Generate Sparse matrix using the Method of Moments – Wire Scattering Problems", Presented at the URSI Meeting, June 1995, Newport Beach, California, page 303 of the meeting digest
	38	Rao, et al., "Generation of Adaptive Basis Functions to Create a Sparse Impedance Matrix Using Method of Moments", Presented at the URSI Meeting, July 20, 2000, Salt Lake City, Utah, page 254 of the meeting digest
	39	Rao, et al, :A New Technique to Generate a Sparse Matrix Using the Method of Moments for Electromagnetic Scattering Problems", Microwave and Optical Technology Letters, Vol. 19, No. 4, November 1998

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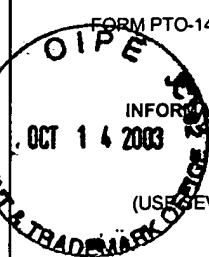| FORM PTO-1449	U.S. DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE	ATTY. DOCKET NO. CANNING.001CP2	APPLICATION NO. 10/619,796
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	40	Rius, et al., "The Multilevel Matrix Decomposition Algorithm in 3-D" Proceedings of the International Conference on Electromagnetics in Advanced Applications, September 1999, pp. 728-732
	41	Rokhlin, et al., "Generalized Gaussian Quadratures and Singular Value Decompositions of Integral Operators", Research Report YALEU/DCS/RR-1109, May 1996
	42	Vladimir Rokhlin, "Sparse Diagonal Forms for Translation Operators for the Helmholtz Equation in Two Dimension", Research Report YALEU/DCS/RR-1095, December 1995
	43	Vladimir Rokhlin, "Diagonal Forms of Translation Operators for the Helmholtz Equation in Three Dimensions", Research Report YALEU/DCS/44-894, March 1992
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	45	Wagner, et al., "A Ray-Propagation Fast Multipole Algorithm", Microwave and Optical Technology Letters, Vol. 7, No. 10, July 1994, pp. 435-438
	46	Zientara, et al., "Dynamic Adaptive MR Imaging Using Multi-Resolution SVD Encoding Incorporating Optical Flow-Based Predictions", Report of National Academy of Sciences Committee on the "Mathematics and Physics of Emerging Dynamic Biomedical Imaging", November 1993
	47	PCT International Search Report

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